

**Amendments to the Specification:**

Please insert the attached "Sequence Listing" (sheets 1 through 146), and comprising SEQ ID NOs: 1-148, into the above-referenced application.

Please replace the paragraph starting at page 50, lines 24 through 28 and continuing on page 51, from lines 1 through 6, with the following paragraph:

--Partially-purified *Pfu* mutant preparations (heat-treated bacterial extracts) were assayed for dUTP incorporation during PCR. In this example, a 2.3kb fragment containing the *Pfu* pol gene was from plasmid DNA using PCR primers: (FPfuLIC) 5'-gACgACgACAAGATgATTTTAgATgTggAT-3' (SEQ ID NO: 1) and (RPfuLIC) 5'-ggAACAAgACCCgTCTAggATTTTTTAATg-3' (SEQ ID NO: 2). Amplification reactions consisted of 1x cloned *Pfu* PCR buffer, 7 ng plasmid DNA, 100ng of each primer, 2.5U of *Pfu* mutant (or wild type *Pfu*), and 200μM each dGTP, dCTP, and dATP. To assess relative dUTP incorporation, various amounts of dUTP (0-400μM) and/or TTP (0-200μM) were added to the PCR reaction cocktail. The amplification reactions were cycled as described in example 6.--

Please replace the Table starting on page 51 and continuing on to page 52, with the following replacement Table:

**--Cycling Conditions and primer sequences:**

Target size (kb)	Target gene	Cycling Parameters
0.9	Hα1AT	(1 cycle) 95°C 2 min (30 cycles) 95°C 5 sec, 58°C 5 sec, 72°C 1 sec or 5 sec. (1 cycle) 72°C 2 min
2.6	Hα1AT	(1 cycle) 95°C 2 min (30 cycles) 95°C 20 sec, 58°C 20 sec, 72°C 5 sec or 1 min 30 sec. (1 cycle) 72°C 3 min
6	β globin	(1 cycle) 95°C 2 min (30 cycles) 95°C 30 sec, 58°C 30 sec, 72°C 1 min or 1min 30 sec. (1 cycle) 72°C 5 min

19	$\beta$ globin	(one cycle) 92°C 2 min (10 cycles) 92°C 10 sec, 63°C 30 sec, 68°C 9.5 min (20 cycles) 92°C 10 sec, 63°C 30 sec, 68°C 9.5 min (plus 10 sec/cycle) (one cycle) 68°C 7 min
Primer size (bp)	Target	Primer sequence
30	H $\alpha$ 1AT 0.9kb	F-5'-AGA.GCT.TGA.GGA.GAG.CAG.GAA.AGG.TGG.AAC-3' (SEQ ID NO. 3)
30	H $\alpha$ 1AT 0.9kb	R-5'-GGG.AGG.GGA.GGT.ACA.GGG.TTG.AGG.CTA.GTG-3' (SEQ ID NO. 4)
30	H $\alpha$ 1AT 2.6kb	F-5'-AGA.GCT.TGA.GGA.GAG.CAG.GAA.AGG.TGG.AAC-3' (SEQ ID NO. 114)
24	H $\alpha$ 1AT 2.6kb	R-5'-TGC.AGA.GCG.ATT.ATT.CAG.GAA.TGC-3' (SEQ ID NO.115)
30	$\beta$ globin 6.0kb	F-5'-ACA.AGG.GCT.ACT.GGT.TGC.CGA.TTT.TTA.TTG-3' (SEQ ID NO. 116)
27	$\beta$ globin 6.0kb	R-5'-GGG.ACT.GGC.CTC.AGA.GGA.AAC.TTC.AGG-3' (SEQ ID NO. 117)
30	$\beta$ globin 19kb	F-5'-ACA.AGG.GCT.ACT.GGT.TGC.CGA.TTT.TTA.TTG-3' (SEQ ID NO. 118)
28	$\beta$ globin 19kb	R-5'-CCT.GCA.TTT.GTG.GGG.TGA.ATT.CCT.TGC.C-3' (SEQ ID NO. 119)

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